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<110> Lechler, Robert I.
Dorling, Anthony

<120> IMMUNOSUPPRESSION BY BLOCKING T CELL CO-STIMULATION SIGNAL 2 (B7/CD28 INTERACTION)

<130> 2292/OH795

<140> US 09/674,462

<141> 2001-05-08

<150> PCT/ GB99/01350

<151> 1999-04-30

<160> 27

<170> PatentIn Ver. 2.1

<210> 1

<211> 223

<212> PRT

<213> Sus scrofa

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Ser Arg Thr Trp Pro Cys Thr Ala Leu Phe Ser Leu Leu Phe Ile Pro
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Val Phe Ser Lys Gly Met His Val Ala Gln Pro Ala Val Val Leu Ala
35 40 45

Asn Ser Arg Gly Val Ala Ser Phe Val Cys Glu Tyr Gly Ser Ala Gly
50 55 60

Lys Ala Ala Glu Val Arg Val Thr Val Leu Arg Arg Ala Gly Ser Gln
65 70 75 80

Met Thr Glu Val Cys Ala Ala Thr Tyr Thr Val Glu Asp Glu Leu Thr
85 90 95

Phe Leu Asp Asp Ser Thr Cys Thr Gly Thr Ser Thr Glu Asn Lys Val
100 105 110

Asn Leu Thr Ile Gln Gly Leu Arg Ala Val Asp Thr Gly Leu Tyr Ile
115 120 125

Cys Lys Val Glu Leu Leu Tyr Pro Pro Pro Tyr Tyr Val Gly Met Gly
 130 135 140

Asn Gly Thr Gln Ile Tyr Val Ile Asp Pro Glu Pro Cys Pro Asp Ser
 145 150 155 160

Asp Phe Leu Leu Trp Ile Leu Ala Ala Val Ser Ser Gly Leu Phe Phe
 165 170 175

Tyr Ser Phe Leu Ile Thr Ala Val Ser Leu Ser Lys Met Leu Lys Lys
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Arg Ser Pro Leu Thr Thr Gly Val Tyr Val Lys Met Pro Pro Thr Glu
 195 200 205

Pro Glu Cys Glu Lys Gln Phe Gln Pro Tyr Phe Ile Pro Ile Asn
 210 215 220

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 <212> DNA
 <213> Sus scrofa

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<210> 3
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 <213> Artificial Sequence

<220>
 <223> pCTLA4-Ig construct (Figure 4)

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 305 310 315 320
 Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
 325 330 335
 Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp
 340 345 350
 Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser
 355 360 365
 Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
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 Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
 385 390 395 400

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<210> 5
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 <213> Phage library

<210> 6
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 caagtctggc acctcagcct ccctggccat cagtgggctc cggtcaggag atgaggctga 660
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 <213> Phage library

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 ccggcagccc ccagggaagg gactggagtg gattgggtat atctattaca gtgggagcac 180
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 <211> 739
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 <213> Phage library

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caagctacgc acagaagttc cagggcagag tcaccatgac cagggacacg tccacgagca 240
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gctccagctc aggaaacaca gcttccttga ccatcactgg ggctcaggcg gaagatgagg 660
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<210> 9
 <211> 729
 <212> DNA
 <213> Phage library

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gccagatgcc cgggaaaggc ctggagtgga tggggatcat ctatcctggg gactctgata 180
ccagatacag cccgtccttc caaggccagg tcaccatctc agccgacaag tccatcagca 240
ccgcctacct gcagtggagc agcctgaagg cctcggacac ggccgtgtat tactgtgcaa 300
gattttcgtc tgggtggttt gactattggg gccaaaggtag cctggtcacc gtctcgagtgc 360
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agtctccatg ttctgtctctg catctgtagg agacagagtc accatcactt gccggggccag 480
tcagggcatt agcagttatt tagcctggta tcagcaaaaa ccagggaaag cccctaagct 540
cctggtctat gctgcatcca ctttgcaaag tgggggtccca tcaagggttca gcggcagtgg 600
atctgggaca gaattcactc tcacaatcag cagcctgcag cctgaagatt ttgcaactta 660
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caaacgtgc 729

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<210> 10
 <211> 240
 <212> PRT
 <213> Phage library

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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
  20              25              30

Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
  35              40              45

Ser Ala Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val
  50              55              60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr

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Leu	Gln	Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	
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Ala	Arg	Ala	Gly	Arg	Ile	Leu	Phe	Asp	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	
			100					105					110			
Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	
		115						120					125			
Gly	Ser	Ala	Leu	Gln	Ser	Val	Leu	Thr	Gln	Pro	Pro	Ser	Ala	Ser	Gly	
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Thr	Pro	Gly	Gln	Arg	Val	Thr	Ile	Ser	Cys	Ser	Gly	Ser	Ser	Ser	Asn	
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Ile	Gly	Ser	Asn	Tyr	Val	Tyr	Trp	Tyr	Gln	Gln	Leu	Pro	Gly	Thr	Ala	
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			180					185					190			
Asp	Arg	Phe	Ser	Gly	Ser	Lys	Ser	Gly	Thr	Ser	Ala	Ser	Leu	Ala	Ile	
		195					200					205				
Ser	Gly	Leu	Arg	Ser	Glu	Asp	Glu	Ala	Ser	Tyr	Tyr	Cys	Ala	Ala	Trp	
	210					215					220					
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<210> 11
 <211> 246
 <212> PRT
 <213> Phage library

<400> 11
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 Ser Gly Ser Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly
 35 40 45

<400> 13

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			20					25					30		
Trp	Ile	Gly	Trp	Val	Arg	Gln	Met	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Met
		35					40					45			
Gly	Ile	Ile	Tyr	Pro	Gly	Asp	Ser	Asp	Thr	Arg	Tyr	Ser	Pro	Ser	Phe
	50					55					60				
Gln	Gly	Gln	Val	Thr	Ile	Ser	Ala	Asp	Lys	Ser	Ile	Ser	Thr	Ala	Tyr
65					70					75					80
Leu	Gln	Trp	Ser	Ser	Leu	Lys	Ala	Ser	Asp	Thr	Ala	Val	Tyr	Tyr	Cys
				85					90					95	
Ala	Arg	Phe	Ser	Leu	Gly	Gly	Phe	Asp	Tyr	Trp	Gly	Gln	Gly	Thr	Leu
			100					105					110		
Val	Thr	Val	Ser	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly
		115					120					125			
Gly	Ser	Ala	Leu	Asp	Ile	Gln	Leu	Thr	Gln	Ser	Pro	Ser	Phe	Leu	Ser
	130					135					140				
Ala	Ser	Val	Gly	Asp	Arg	Val	Thr	Ile	Thr	Cys	Arg	Ala	Ser	Gln	Gly
145					150					155					160
Ile	Ser	Ser	Tyr	Leu	Ala	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Lys	Ala	Pro
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Lys	Leu	Leu	Val	Tyr	Ala	Ala	Ser	Thr	Leu	Gln	Ser	Gly	Val	Pro	Ser
			180					185					190		
Arg	Phe	Ser	Gly	Ser	Gly	Ser	Gly	Thr	Glu	Phe	Thr	Leu	Thr	Ile	Ser
		195					200					205			
Ser	Leu	Gln	Pro	Glu	Asp	Phe	Ala	Thr	Tyr	Tyr	Cys	Gln	Gln	Leu	Asn
	210					215					220				
Ser	Tyr	Arg	Leu	Thr	Phe	Gly	Gln	Gly	Thr	Lys	Leu	Glu	Ile	Lys	Arg
225					230					235					240

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 <212> DNA
 <213> Homo sapiens

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 cctggccctg cactctcctg ttttttcttc tcttcatccc tgtcttctgc aaagcaatgc 180
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 gccaggtgac tgaagtctgt gcggcaacct acatgatggg gaatgagttg accttcctag 360
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<210> 15
 <211> 223
 <212> PRT
 <213> Homo sapiens

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 Val Phe Cys Lys Ala Met His Val Ala Gln Pro Ala Val Val Leu Ala
 35 40 45
 Ser Ser Arg Gly Ile Ala Ser Phe Val Cys Glu Tyr Ala Ser Pro Gly
 50 55 60
 Lys Ala Thr Glu Val Arg Val Thr Val Leu Arg Gln Ala Asp Ser Gln
 65 70 75 80
 Val Thr Glu Val Cys Ala Ala Thr Tyr Met Met Gly Asn Glu Leu Thr
 85 90 95
 Phe Leu Asp Asp Ser Ile Cys Thr Gly Thr Ser Ser Gly Asn Gln Val
 100 105 110
 Asn Leu Thr Ile Gln Gly Leu Arg Ala Met Asp Thr Gly Leu Tyr Ile
 115 120 125

Cys Lys Val Glu Leu Met Tyr Pro Pro Pro Tyr Tyr Leu Gly Ile Gly
 130 135 140
 Asn Gly Thr Gln Ile Tyr Val Ile Asp Pro Glu Pro Cys Pro Asp Ser
 145 150 155 160
 Asp Phe Leu Leu Trp Ile Leu Ala Ala Val Ser Ser Gly Leu Phe Phe
 165 170 175
 Tyr Ser Phe Leu Leu Thr Ala Val Ser Leu Ser Lys Met Leu Lys Lys
 180 185 190
 Arg Ser Pro Leu Thr Thr Gly Val Tyr Val Lys Met Pro Pro Thr Glu
 195 200 205
 Pro Glu Cys Glu Lys Gln Phe Gln Pro Tyr Phe Ile Pro Ile Asn
 210 215 220

<210> 16
 <211> 773
 <212> DNA
 <213> Homo sapiens

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 <211> 28
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 <213> Artificial Sequence

<220>
 <223> PCR primer

<400> 17
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<210> 18
 <211> 33
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> PCR primer

<400> 18
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<210> 19
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 <212> DNA
 <213> Artificial Sequence

<220>
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<400> 19
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<210> 20
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> PCR primer

<400> 20
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<210> 21
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 <212> DNA
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<220>
 <223> PCR primer

<400> 21
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<210> 22
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 <212> DNA
 <213> Artificial Sequence

<220>

<223> PCR primer

<400> 22

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30

<210> 23

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 23

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33

<210> 24

<211> 76

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 24

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tccgttgect atgccc 76

<210> 25

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 25

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29

<210> 26

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 26

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33

<210> 27

<211> 73

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 27

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tgatatctac atc 73